

8-OHdG (F-12): sc-393870

BACKGROUND

DNA or RNA damage can hinder the ability of a cell to carry out its function and can significantly increase the likelihood of tumor formation. One of the causes of damaged DNA and RNA is oxidation of the bases. 8-hydroxy-2'-deoxyguanosine, 8-hydroxyguanine (8-OHdG) and 8-hydroxyguanosine are all markers of oxidative damage to RNA and DNA. 8-hydroxy-2'-deoxyguanosine is produced by reactive oxygen and nitrogen species, including hydroxyl radical and peroxynitrite. 8-hydroxyguanine is one of the major base lesions involved in mutagenesis and is caused by ionizing radiation and radiomimetic agents. 8-hydroxyguanosine induces a transversion of G to T in DNA, which may be mutagenic. Markers of DNA and RNA damage are useful research tools when studying the effects of this type of damage.

REFERENCES

- Musarrat, J., et al. 1996. Prognostic and aetiological relevance of 8-hydroxyguanosine in human breast carcinogenesis. *Eur. J. Cancer* 32A: 1209-1214.
- Parker, A.R., et al. 2002. 8-hydroxyguanosine repair is defective in some microsatellite stable colorectal cancer cells. *Cancer Res.* 62: 7230-7233.
- Abe, T., et al. 2002. Alteration of 8-hydroxyguanosine concentrations in the cerebrospinal fluid and serum from patients with Parkinson's disease. *Neurosci. Lett.* 336: 105-108.
- Winter, D.B., et al. 2003. Normal somatic hypermutation of Ig genes in the absence of 8-hydroxyguanine-DNA glycosylase. *J. Immunol.* 170: 5558-5562.
- Russo, M.T., et al. 2004. Accumulation of the oxidative base lesion 8-hydroxyguanine in DNA of tumor-prone mice defective in both the Myh and Ogg1 DNA glycosylases. *Cancer Res.* 64: 4411-4414.

SOURCE

8-OHdG (F-12) is a mouse monoclonal antibody raised against 8-hydroxy-2'-deoxyguanosine (8-OHdG)-BCP conjugate of synthetic origin.

PRODUCT

Each vial contains 200 µg IgM kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

8-OHdG (F-12) is recommended for detection of 8-OHdG (8-hydroxy-2'-deoxyguanosine) by immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

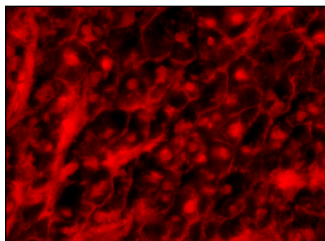
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz[®] Mounting Medium: sc-24941 or UltraCruz[®] Hard-set Mounting Medium: sc-359850. 2) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

DATA



8-OHdG (F-12): sc-393870. Immunofluorescence staining of formalin-fixed, paraffin-embedded red snapper liver tissue showing 8-OHdG staining in hepatocytes. Kindly provided by Saydur Rahman, Ph.D., Marine Science Institute, University of Texas.

SELECT PRODUCT CITATIONS

- Sohn, E., et al. 2015. Extract of rhizoma *Polygonum cuspidatum* reduces early renal podocyte injury in streptozotocin-induced diabetic rats and its active compound emodin inhibits methylglyoxal-mediated glycation of proteins. *Mol. Med. Rep.* 12: 5837-5845.
- Sukumaran, V., et al. 2017. Azilsartan ameliorates diabetic cardiomyopathy in young db/db mice through the modulation of ACE-2/ANG 1-7/Mas receptor cascade. *Biochem. Pharmacol.* 144: 90-99.
- Avola, R., et al. 2018. Blue light induces down-regulation of aquaporin 1, 3, and 9 in human keratinocytes. *Cells* 7: 197.
- Kasnak, G., et al. 2018. Elevated levels of 8-OHdG and PARK7/DJ-1 in peri-implantitis mucosa. *Clin. Implant Dent. Relat. Res.* 20: 574-582.
- Avola, R., et al. 2019. Hydroxytyrosol from olive fruits prevents blue-light-induced damage in human keratinocytes and fibroblasts. *J. Cell. Physiol.* 234: 9065-9076.
- Avola, R., et al. 2020. Oregano (*Origanum vulgare L.*) essential oil provides anti-inflammatory activity and facilitates wound healing in a human keratinocytes cell model. *Food Chem. Toxicol.* 144: 111586.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

CONJUGATES

See **8-OHdG (E-8): sc-393871** for 8-OHdG antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor[®] 488, 546, 594, 647, 680 and 790.